

We Claim:

1. An isolated nucleic acid molecule
encoding a biologically active DKR polypeptide selected
5 from the group consisting of:

(a) the nucleic acid molecule comprising SEQ
ID NO:1;

(b) the nucleic acid molecule comprising SEQ
ID NO:2;

10 (c) the nucleic acid molecule comprising SEQ
ID NO:3;

(d) the nucleic acid molecule comprising SEQ
ID NO:4;

15 (e) the nucleic acid molecule comprising SEQ
ID NO:5;

(f) the nucleic acid molecule comprising SEQ
ID NO:6;

(g) the nucleic acid molecule comprising SEQ
ID NO:7;

20 (h) the nucleic acid molecule comprising SEQ
ID NO:75;

25 (i) the nucleic acid molecule comprising SEQ
ID NO:76;

(j) the nucleic acid molecule comprising SEQ
ID NO:77;

30 (k) the nucleic acid molecule comprising SEQ
ID NO:78;

(l) the nucleic acid molecule encoding the
polypeptide of SEQ ID NO:8;

(m) a nucleic acid molecule encoding the polypeptide of SEQ ID NO:9;

(n) a nucleic acid molecule encoding the polypeptide of SEQ ID NO:10, or a biologically active
5 fragment thereof;

(o) a nucleic acid molecule encoding the polypeptide of SEQ ID NO:11, or a biologically active fragment thereof;

(p) a nucleic acid molecule encoding the
10 polypeptide of SEQ ID NO:12, or a biologically active fragment thereof;

(q) a nucleic acid molecule encoding the polypeptide of SEQ ID NO:13, or a biologically active fragment thereof;

(r) a nucleic acid molecule encoding the
15 polypeptide of SEQ ID NO:14, or a biologically active fragment thereof

(s) a nucleic acid molecule that encodes a polypeptide that is at least 85 percent identical to
20 the polypeptide of SEQ ID NOS: 10, 11, 12, 13, or 14;

(t) a nucleic acid molecule that encodes a biologically active DKR polypeptide that has 1-100 amino acid substitutions and/or deletions as compared with the polypeptide of any of SEQ ID NOS:8, 9, 10, 11,
25 12, 13, or 14; and

(u) a nucleic acid molecule that hybridizes under conditions of high stringency to any of (c), (d), (e), (f), (g), (h), (i), (k), (l), (m), (n), (o), (p), (q), (r), (s), and (t) above.

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2 An isolated nucleic acid molecule that is the complement of the nucleic acid molecule of claim 1.

3. An isolated nucleic acid molecule comprising SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, or SEQ ID NO:7.
- 5 4. An isolated nucleic acid molecule encoding the polypeptide of SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, or SEQ ID NO:14.
- 10 5. An isolated nucleic acid molecule encoding a biologically active DKR polypeptide selected from the group consisting of: amino acids 16-350, 21-350, 22-350, 23-350, 33-350, or 42-350, 21-145, 40-145, 40-150, 45-145, 45-145, 145-290, 145-300, 145-350, 150-290,
15 300-350, or 310-350 of SEQ ID NO:9; amino acids 15-266, 24-266, or 32-266 of SEQ ID NO:10; amino acids 17-259, 26-259, or 34-359 of SEQ ID NO:12; and amino acids 19-224, 20-224, 21-224, or 22-224 of SEQ ID NO:14.
- 20 6. A vector comprising the nucleic acid molecule of claim 1.
7. A vector comprising the nucleic acid molecule of claim 2.
- 25 8. A vector comprising the nucleic acid molecule of claim 3.
9. A vector comprising the nucleic acid molecule of claim 4.
- 30 10. A vector comprising the nucleic acid molecule of claim 5.

11. A host cell comprising the vector of claim 6.

5 12. A host cell comprising the vector of claim 7.

13. A host cell comprising the vector of claim 8.

10 14. A host cell comprising the vector of claim 9.

15 15. A host cell comprising the vector of claim 10.

16. A process for producing a biologically active DKR polypeptide comprising the steps of:

- 20 (a) expressing a polypeptide encoded by the nucleic acid of claim 1 in a suitable host; and
(b) isolating the polypeptide.

25 17. The process of claim 16 wherein the polypeptide is SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13 or SEQ ID NO:14.

18. A biologically active DKR polypeptide selected from the group consisting of:

- 30 (a) the polypeptide of SEQ ID NO:8;
(b) the polypeptide of SEQ ID NO:9;
(c) the polypeptide of SEQ ID NO:10;
(d) the polypeptide of SEQ ID NO:11;
(e) the polypeptide of SEQ ID NO:12;
(f) the polypeptide of SEQ ID NO:13;
(g) the polypeptide of SEQ ID NO:14;

(h) a polypeptide that has 1-100 amino acid substitutions or deletions as compared with the polypeptide of any of (a)-(h) above; and

(i) a polypeptide that is at least 85 percent
5 identical to any of the polypeptides of (c)-(h) above.

19. The polypeptide of claim 18 that does not possess an endogenous signal peptide.

10 20. A polypeptide selected from the group consisting of amino acids 16-350, 21-350, 22-350, 23-350, 33-350, 42-350, 21-145, 40-145, 40-150, 45-145, 45-145, 145-290, 145-300, 145-350, 150-290, 300-350, or 310-350 of SEQ ID NO:9; amino acids 15-266, 24-266, or
15 32-266 of SEQ ID NO:10; amino acids 17-259, 26-259, or 34-259 of SEQ ID NO:12; and amino acids 19-224, 20-224, 21-224, or 22-224 of SEQ ID NO:14.

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